

A revision of the spider genus *Brettus* (Araneae : Salticidae)

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Introduction

The genus *Brettus* was proposed by Thorell (1895) for the Burmese species *Brettus cingulatus* Thorell. Simon (1900) described four more species (*Brettus martini* from South Africa, *B. albolimbatus* and *B. semifimbriata* from India and *B. adonis* from Sri Lanka) and in 1901 synonymized the genus with *Portia*. Wanless (1978*b*) revised *Portia* and resurrected *Brettus* in part. *Brettus martini* Simon could not be recognized from the original description and as the type specimen could not be found the name was considered a *nomen dubium*. In the present paper the genus is redefined and its affinities discussed. The four known species (of which one is new) are described and keyed. One species is newly synonymized and three lectotypes designated.

The measurements were made in the manner described by Wanless (1978*a*).

The known species of *Brettus* are closely related and occur in the Oriental region. They resemble spiders of the genus *Portia*, but are generally smaller in size and lack the abdominal hair tufts. Unfortunately their biology is unknown though it is considered that their behaviour may be similar to that described for some species of *Portia* (Wanless, 1978*b*), and that specimens may be found living in diplurid or pholcid webs.

Genus *BRETTUS* Thorell

Brettus Thorell, 1895 : 354. Type species *Brettus cingulatus* Thorell, by original designation and monotypy. Simon, 1901 : 402 [= *Portia*] Petrunkevitch, 1928 : 213. Bonnet, 1955 : 915. Wanless, 1978*b* : 84 [gen. rev.].

DEFINITION. Small to medium spiders ranging from about 3.0 to 8.0 mm in length. Sexes alike; leg fringes present, but abdominal hair tufts apparently lacking; colour patterns composed of setae (easily rubbed). *Carapace*: high, longer than broad; fovea present, behind posterior lateral eyes; sculpturing not marked, cuticle weakly iridescent (under some angles of illumination); in most species, broad marginal bands composed of white setae extend from clypeal region to posterior thoracic margin. *Eyes*: anteriors subcontiguous with apices recurved; posterior median eyes relatively large, nearer to anterior laterals than to posterior laterals; posterior row narrower than anterior row; quadrangle length between 40 and 50 per cent of carapace length. *Clypeus*: moderately high to high, concave. *Chelicerae*: medium to large, more or less vertical; promargin with 3 teeth, retromargin with 3 to 4. *Maxillae*: elongate, usually divergent. *Labium*: subtriangular, about half maxilla length. *Sternum*: elongate scutiform. *Pedichel*: short. *Abdomen*: elongate ovoid; scuta lacking, but four impressed spots usually present; anterior and posterior spinnerets robust, subequal in length, medians slender, relatively short; trachea not examined (insufficient material). *Legs*: long and slender, fringes present on legs I and sometimes II; spines numerous, moderately robust; claws pectinate, tufts present, scopula lacking; legs I-II with minute setae in parallel row on venter of tarsi and metatarsi. *Female palp*: long and slender with terminal claw (difficult to see). *Male palp*: femoral apophyses lacking; tibiae with lateral and ventral apophyses, the former with an associated duct which appears to arise from a flask-like vacuole (Fig. 1E, F). Cymbium modified proximally; embolus very long and slender; conductor apparently lacking; tegulum with peripheral seminal reservoir, a curved furrow (Fig. 1A, B) and a bipartite membranous apophysis (apparently lacking in *B. adonis*) adjacent to the embolic base; median

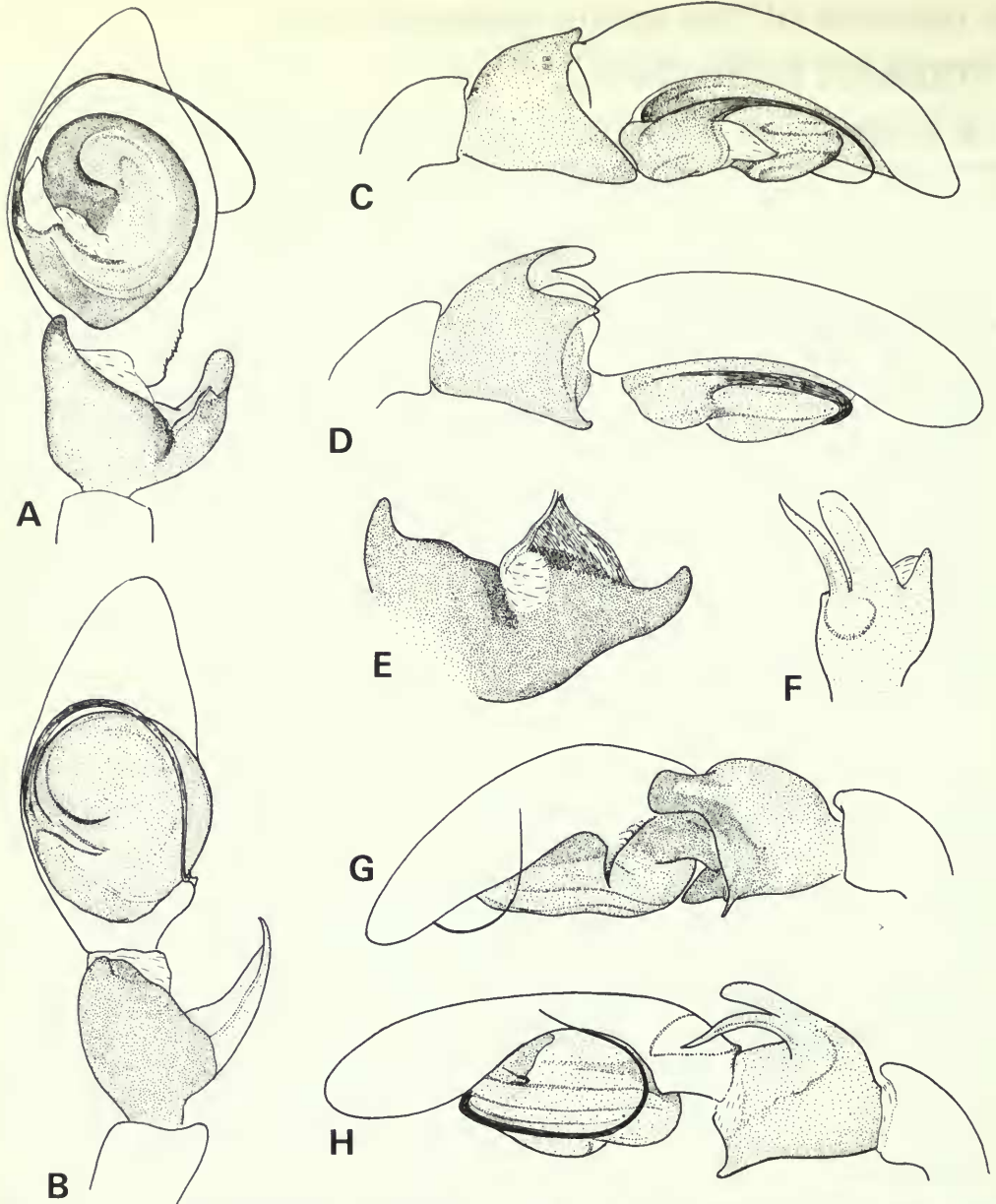


Fig. 1 (A, C, E, G) *Brettus cingulatus* Thorell, holotype ♂: (A) palp, ventral view; (C) palp, mesal view; (E) palpal tibia, posterior view; (G) palp, ectal view. (B, D, F, H) *B. adonis* Simon, ♂: (B) palp, ventral view; (D) palp, mesal view; (F) palpal tibia, dorsolateral view; (H) palp, ectal view.

apophysis lacking. *Epigyne*: relatively simple; openings usually indistinct, leading to elongate ducts which terminate distally as spermathecae.

AFFINITIES. Wanless (1978*b*) suggested that on behavioural and anatomical grounds *Portia*, *Brettus*, *Cocalus* and several other genera with large posterior median eyes could be related to lyssomanid spiders and that *Brettus* may form a link between *Portia* in the Salticidae and *Asemonea* in the Lyssomanidae. Unfortunately the link cannot be satisfactorily demonstrated from the known species of *Brettus* which are evidently closer to *Portia* than to *Asemonea*. Preliminary

observations on male *Asemonea* have shown that the palps are generally very complex and that some males (e.g. *A. tenuipes* O.P.-C.) apparently have ducts associated with the femoral apophyses. The presence of these ducts may indicate a distant relationship with *Brettus*, but their significance cannot be evaluated at the present time.

DIAGNOSIS. *Brettus* is distinguished from *Portia* by the very long embolus and the apophysal duct on the tibiae in males, and the long fertilization ducts in females. A fuller diagnosis cannot be given until other related genera have been revised.

List of species in the genus *Brettus* Thorell, 1895

- Brettus adonis* Simon, 1900
B. albolimbatus Simon, 1900
B. anchorum sp. n.
B. cingulatus Thorell, 1895

Key to species of *Brettus*

- | | | |
|---|--|------------------------------------|
| 1 | Males – | 2 |
| – | Females | 3 |
| 2 | Retrolateral tibial apophysis not bifurcate, ectal margin of cymbium with pointed spur (Fig. 1G)
(Burma) | <i>cingulatus</i> Thorell (p. 185) |
| – | Retrolateral tibial apophysis bifurcate, ectal margin of cymbium lacking pointed spur (Fig. 1H)
(Sri Lanka) | <i>adonis</i> Simon (p. 186) |
| 3 | Distal margin of epigynal plate clearly projecting beyond epigastric fold (Fig. 3A) (Sri Lanka)
. | <i>adonis</i> Simon (p. 186) |
| – | Distal margin of epigynal plate not projecting beyond epigastric fold | 4 |
| 4 | Spermathecae extending laterally (Figs 3B; 4C, D) (India) | <i>anchorum</i> sp. n. (p. 188) |
| – | Spermathecae extending anteriorly (Figs 3C, D; 4A, B) (India) | <i>albolimbatus</i> Simon (p. 188) |

Brettus cingulatus Thorell (Figs 1A, C, E, G; 2A, B)

Brettus cingulatus Thorell, 1895 : 355, ♂. Holotype ♂, Burma, Tharrawaddy (NR, Stockholm, no. 1605) [Examined]. Wanless, 1978b : 83.

Portia cingulata: Simon, 1901 : 402. Reimoser, 1925 : 90. Roewer, 1954 : 934. Bonnet, 1958 : 3766. Prószyński, 1971 : 461.

DIAGNOSIS. The male of *B. cingulatus* is readily distinguished from that of *Brettus adonis* by the pointed spur on the ectal margin of the cymbium (Fig. 1G).

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 2A, B): orange-brown with paler eye region and a wide marginal band composed of recumbent, silky white hairs from clypeus to posterior thoracic margin. *Eyes*: with black surrounds except AM; anteriors fringed by whitish hairs. *Clypeus*: densely clothed in silky white hairs. *Chelicerae*: orange-brown; thinly covered in fine light brown hairs; promargin with 3 teeth, retromargin with 4. *Maxillae and labium*: pale orange-brown tinged with grey. *Sternum*: light orange-brown with poorly defined reddish orange margins; sparsely clothed in dull white hairs. *Abdomen*: rubbed; light yellow-orange tinged with black; pattern indistinct. *Legs*: anteriors dark orange-brown, posteriors lighter; brown ventral fringes present on femora, patellae and tibiae of legs I and II; spines numerous, moderately robust. *Palp* (Fig. 1A, C, E, G).

Dimensions (mm): total length 5.6; carapace length 2.56, breadth 2.2, height 1.48; abdomen length 2.88; eyes anterior row 1.44, middle row 1.08, posterior row 1.28; quadrangle length 1.08. *Ratios*: AM : AL : PM : PL : 12.5 : 6.5 : 5 : 6; AL-PM-PL : 6.5-9.

DISTRIBUTION. Burma.

MATERIAL EXAMINED. Holotype ♂, data given in synonymy.

Brettus adonis Simon comb. rev.

(Figs 1B, D, F, H; 2D, E; 3A)

Brettus adonis Simon, 1900 : 32, ♀, LECTOTYPE ♀ (here designated) Sri Lanka, Galle (MNHN, Paris, no. 20416) [Examined].

Portia adonis (Simon): Simon, 1901 : 402. Roewer, 1954 : 934. Bonnet, 1958 : 3766. Prószyński, 1971 : 461.

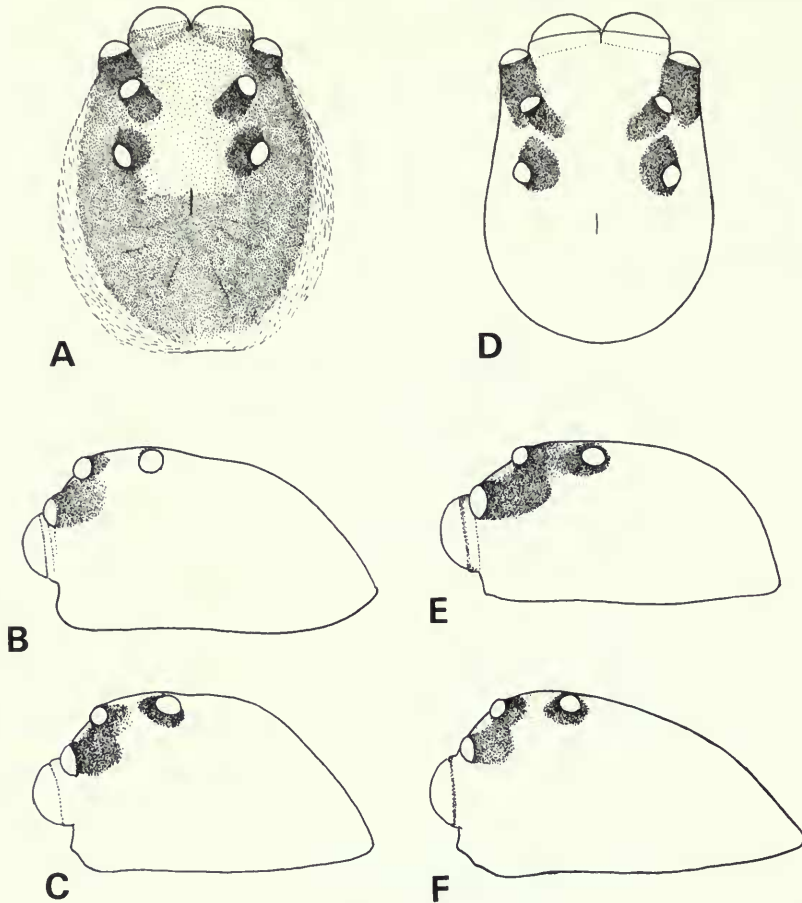


Fig. 2 (A, B) *Brettus cingulatus* Thorell, holotype ♂: (A) carapace, dorsal view; (B) carapace, lateral view. *B. albolimbatus* Simon, lectotype ♀: (C) carapace, lateral view. (D, E) *B. adonis* Simon, ♂: (D) carapace, dorsal view; (E) carapace, lateral view. *B. anchorum* sp. n. holotype ♀: (F) carapace, lateral view.

The vial labelled '20416 Port Adonis [sic] E. S. Galle type' contains one male and one female. The female is considered to be the type specimen and is designated lectotype. The male, which appears to be conspecific, is described below.

DIAGNOSIS. *B. adonis* is distinguished from *Brettus cingulatus* by the absence of a pointed spur on the ectal margin of the cymbium in males (Fig. 1H), and the posterior projection of the epigynal plate in females (Fig. 3A).

MALE FROM GALLE, SRI LANKA. *Carapace* (Fig. 2D, E): light orange with yellow-orange eye region; very sparsely clothed in minute iridescent setae (mostly rubbed). *Eyes*: with black surrounds except AM; anteriors fringed by pale yellow hairs. *Clypeus*: fringed by short silky white hairs. *Chelicerae*: yellow with faint sooty markings; fringed proximally with transverse band of silky

white hairs; teeth not examined. *Maxillae and labium*: yellow tinged with grey. *Sternum*: yellow, glossy. *Abdomen*: yellow with faint blackish mottling; very sparsely clothed in minute iridescent setae. *Legs*: legs I orange to pale orange, lightly tinged with black; remaining legs pale yellow; legs I densely fringed by stiff orange-brown hairs on venter and dorsum of tibiae, venter of patellae and distal venter of femora. Spines moderately robust and numerous. *Palp* (Fig. 1B, D, F, H).

Dimensions (mm): total length 3.16; carapace length 1.65, breadth 1.28, height 0.92; abdomen length 1.44; eyes anterior row 1.08, middle row 0.84, posterior row 0.92; quadrangle length 0.80. *Ratios*: AM : AL : PM : PL : 9.5 : 4.5 : 3.5 : 4; AL-PM-PL : 5-6.5.

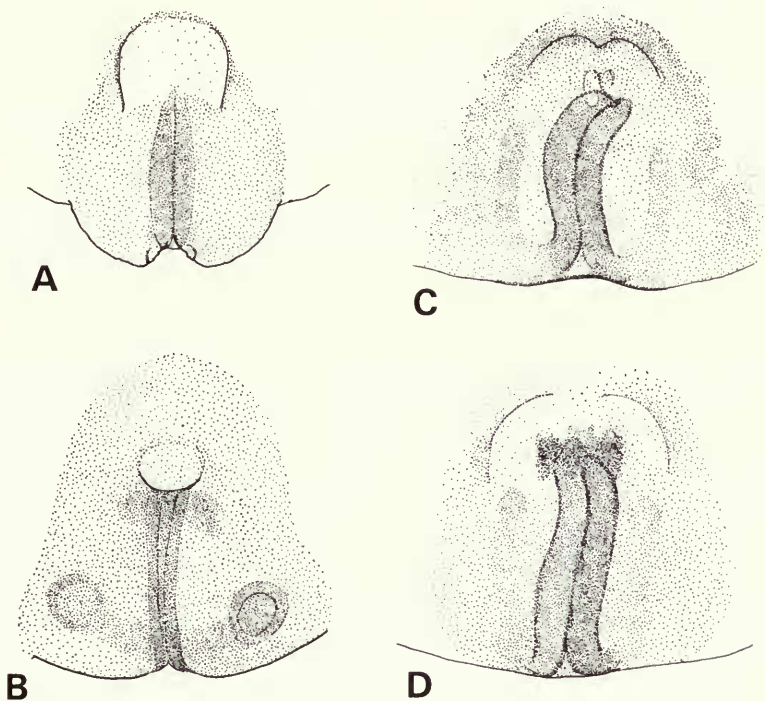


Fig. 3 *Brettus adonis* Simon, lectotype ♀: (A) epigyne. *B. anchorum* sp. n. holotype ♀: (B) epigyne. (C, D) *B. albolimbatus* Simon, lectotype ♀: (C) epigyne; paralectotype ♀: (D) epigyne.

FEMALE LECTOTYPE. Body form and colour similar to ♂. *Carapace*: as in ♂, but irregularly clothed with recumbent white hairs, iridescent under some angles of illumination, apparently forming a wide marginal band from clypeus to posterior thoracic margin. *Eyes*: more or less as in ♂. *Clypeus*: thinly clothed in fine whitish hairs. *Maxillae and labium*: as in ♂. *Sternum*: as in ♂. *Abdomen*: pale yellow with a greyish tip and markings forming an ill-defined ventral band from spinnerets to epigyne. *Legs*: similar to ♂ but dorsal fringes on legs I lacking and with patellae and ventral tibial fringes composed of long white hairs proximally. *Palps*: long and slender, whitish yellow with white hairs. *Epigyne* (Fig. 3A): vulva not examined.

Dimensions (mm): total length 4.6; carapace length 1.96, breadth 1.56, height 1.04; abdomen length 2.52; eyes anterior row 1.27, middle row 0.98, posterior row 1.12; quadrangle length 0.96. *Ratios*: AM : AL : PM : PL : 11.5 : 6 : 4 : 5; AL-PM-PL : 6-8.

DISTRIBUTION. Sri Lanka.

MATERIAL EXAMINED. Lectotype ♀, data given in synonymy. SRI LANKA: Galle, 1 ♂ in the same vial as the lectotype.

Brettus albolimbatus Simon comb. rev.

(Figs 2C; 3C, D; 4A, B)

Brettus albolimbatus Simon, 1900 : 31, ♀. LECTOTYPE ♀ (here designated) India, Trichinopoly (MNHN, Paris, no. 17534) [Examined].

Portia albolimbata (Simon): Simon, 1901 : 402. Roewer, 1954 : 934. Bonnet, 1958 : 3766. Prószyński, 1971 : 461. Wanless, 1978b : 85.

Brettus semifimbriatus Simon, 1900 : 31, ♀. LECTOTYPE ♀ (here designated) India, Trichinopoly (MNHN, Paris, no. 18918) [Examined]. **Syn. n.**

Portia semifimbriata (Simon): Simon, 1901 : 401, 402. Strand, 1912 : 148. Roewer, 1954 : 934. Bonnet, 1958 : 3767. Wanless, 1978b : 85.

Portia foveata Strand, 1912 : 148. [Published as a synonym of *P. semifimbriata* (Simon).]

The vial labelled '17534 Port. Scultzi Karch [sic] (albolimbata E. S. type) Natal C.M.' contains one female which is conspecific with the lectotype of *Brettus semifimbriatus* Simon. In view of this conspecificity and the reference to 'albolimbata E. S. type' on the label, the locality and collector data, i.e. Natal, C[h]. M[artin], is probably erroneous and the specimen is considered to be the type of *B. albolimbata*.

DIAGNOSIS. *B. albolimbatus*, known only from the female, is distinguished from other females of *Brettus* by the S-shaped fertilization ducts and the anteriorly extended spermathecae (Figs 3C, D; 4A, B).

MALE. Unknown.

FEMALE LECTOTYPE. *Carapace* (Fig. 2C): light orange-brown with yellow-orange eye region and faint sooty marking radiating from fovea; shiny and weakly iridescent under some angles of illumination; from AL to posterior thoracic margin a broad white marginal band composed of recumbent white hairs. *Eyes*: with black surrounds except AM; anteriors fringed by whitish hairs. *Clypeus*: thinly covered in white hairs. *Chelicerae*: pale orange-brown with sooty markings; sparsely clothed in long fine pale orange hairs; pro- and retromargins with 3 teeth. *Maxillae and labium*: light orange-brown tinged with grey. *Sternum*: light orange-brown, shiny; thinly clothed in fine light orange hairs. *Abdomen*: whitish yellow tipped with grey, with greyish markings dorsally and subparallel bands from epigyne to spinnerets; irregularly clothed in white and orange-brown hairs (rubbed). *Legs*: pale yellow to orange-brown with ventral brown fringes on tibiae I, patellae I and femora I; similar fringes on legs II, but less dense; spines numerous, moderately robust. *Palp*: white with yellowish tips. *Epigyne* (Fig. 3C).

Dimensions (mm): total length 5.04; carapace length 2.4, breadth 2.0, height 1.4; abdomen length 2.76; eyes anterior row 1.44, middle row 1.14, posterior row 1.26; quadrangle length 0.98. *Ratios*: AM : AL : PM : PL : 12.5 : 6 : 5 : 5.5; AL-PM-PL : 7-9.

VARIATION. Females vary from 5.04 to 7.2 mm total length, 2.4 to 2.9 mm carapace length (three specimens). The appearance of the epigynal fertilization ducts is evidently variable (Fig. 3C, D).

DISTRIBUTION. India.

MATERIAL EXAMINED. Lectotype females, data given in synonymy. **INDIA:** Madras, Trichinopoly, 1 ♀ paralectotype in the same vial as the lectotype of *B. semifimbriatus* (no. 18918).

Brettus anchorum sp. n.

(Figs 3B; 4C, D)

DIAGNOSIS. *B. anchorum*, known only from the female is separated from other females of *Brettus* by the laterally extended spermathecae (Figs 3B; 4C, D).

MALE. Unknown.

FEMALE HOLOTYPE. *Carapace* (Fig. 2F): pale orange with yellowish eye region and broad marginal bands of recumbent white hairs from AM to posterior thoracic margin. *Eyes*: with black surrounds

except AM; anteriors fringed by white hairs. *Clypeus*: thinly clothed in whitish hairs. *Chelicerae*: pale orange with long fine white hairs; promargin with 3 teeth, retromargin with 4. *Maxillae and labium*: pale orange tinged with grey. *Sternum*: light yellow, shiny. *Abdomen*: whitish yellow. *Legs*: whitish yellow to orange; tibiae I, patellae I and distal half of femora I ventrally fringed by stiff orange-brown hairs. *Palp*: light yellow. *Epigyne* (Figs 3B; 4C, D).

Dimensions (mm): total length 7.82; carapace length 2.72, breadth 2.36, height 1.48; abdomen length 4.7; eyes anterior row 1.4, middle row 1.08, posterior row 1.26; quadrangle length 1.12. *Ratios*: AM : AL : PM : PL : 13 : 6 : 5 : 6; AL-PM-PL : 7-9.5.

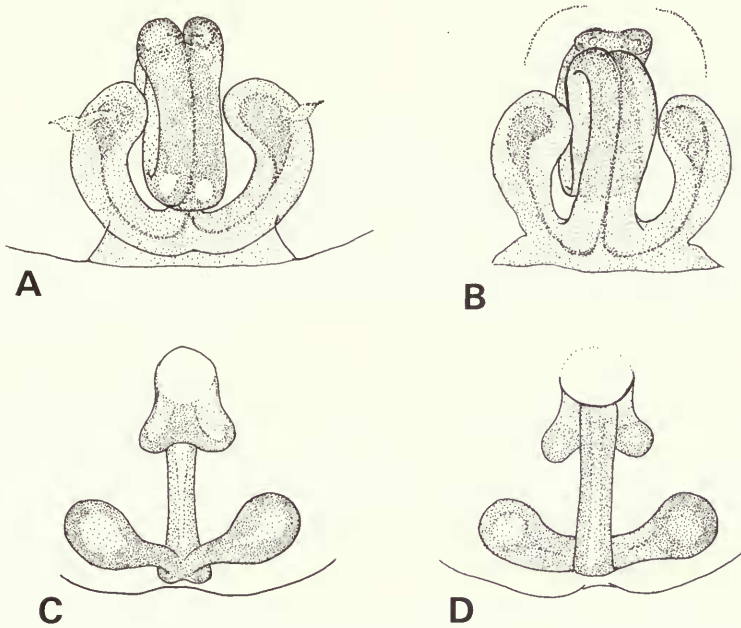


Fig. 4 (A, B) *Brettus albolimbatus* Simon, paralectotype ♀: (A) vulva, ventral view; (B) vulva, dorsal view. (C, D) *B. anchorum* sp. n. holotype ♀: (C) vulva, ventral view; (D) vulva, dorsal view.

DISTRIBUTION. India.

MATERIAL EXAMINED. Holotype ♀, India, Madras, Nilghiri Hills (*Sir George Hampson*) (BMNH. Reg. No. 1977.12.21.1).

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